

REMARKS/ARGUMENTS

Claims 1-3, 6, 8-12, 15-18, and 20-21 are pending in the application with claim 21 allowed and claims 6, 10-12, and 15-17 objected to. Reexamination and reconsideration of claims 1-3, 8-9, 18, and 20 are hereby requested.

Claims 1, 9, and 18 were rejected as unpatentable over Paik. The Examiner cited Paik column 4, lines 48-56 and figure 2.

Applicants reply that the cited portion of Paik partitions input "into a first bit and at least one remaining bit. ... encoding the first bit with a rate $\frac{1}{2}$ binary convolutional encoding algorithm to provide a two-bit codeword that defines one of four subsets of an N-bit QAM constellation pattern, each subset including N/4 symbol points ... The remaining bits correlate the [input] symbol with one of the N/4 symbol points included in the subset defined by the codeword." That is, Paik uses a binary convolution code of rate $\frac{1}{2}$ on one bit to select the constellation subset for the remaining bits, and this constellation subset point is transmitted as illustrated in the top half of Paik figure 3. Thus the binary convolution code output is not mapped to the constellation for transmission and is only implicitly transmitted; contrary to the claims.

And further, the rate $\frac{1}{2}$ code selected by Paik (generator matrix 171, 133) is unique as having maximal free distance for codes of constraint length 7; thus it is not obvious to use the claimed rate $\frac{1}{2}$ convolution code having generator matrix 133, 175 in Paik.

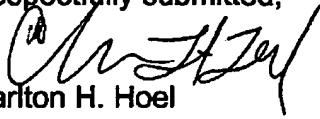
The remaining claims rejected as unpatentable over Paik plus Oshima are dependent upon either claim 1 or claim 18, and applicants rely on the patentability of the independent claims.

Claim 8 was rejected as incomplete.

The foregoing amendment of claim 8 overcomes the rejection.

Appl.No.: 09/366,963
Amendment dated June 3, 2004
Reply to Office action of March 3, 2004

Respectfully submitted,



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